RECYCLING OF FECAL PELLETS IN ISOPODS: MICROORGANISMS AND NITROGEN COMPOUNDS AS POTENTIAL FOOD FOR COPROPHAGOUS ONISCUS ASELLUS L.

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ПОВТОРНЫЙ ЦИКЛ ЭКСКРЕМЕНТОВ У ИЗОПОД: МИКРООРГАНИЗМЫ И АЗОТСОДЕРЖАЩИЕ СОЕДИНЕНИЯ КАК ПОТЕНЦИАЛЬНАЯ ПИЩА ДЛЯ КОПРОФАГА ONISCUS ASELLUS L.

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Plate count analysis and measurements of bacterial cell wall amino acids (D-alanine and diaminopimelic acid) were performed to investigate the use of microorganisms as potential food for Oniscus asellus during recycling of fecal pellets.

Immediately after a gut passage the number of microorganisms in the fecal pellets was lower than before. On the contrary, the level of protein and cell wall amino acids was higher, thus indicating that an extensive growth of bacteria occurred in the guts. The composition of microbes was different in fresh fecal pellets compared to litter and further changed in 0-6 days old ones. The amount of total nitrogen increased three-fold during the first gut passage, but no nitrogen fixation was detected in either isopods or fecal pellets. Neither nitrogen nor protein or free amino acids were effectively extracted from recycled fecal pellets by the isopods.

We conclude that isopods are not efficient in using bacteria as food or in assimilating nitrogen compounds from recycled fecal pellets.